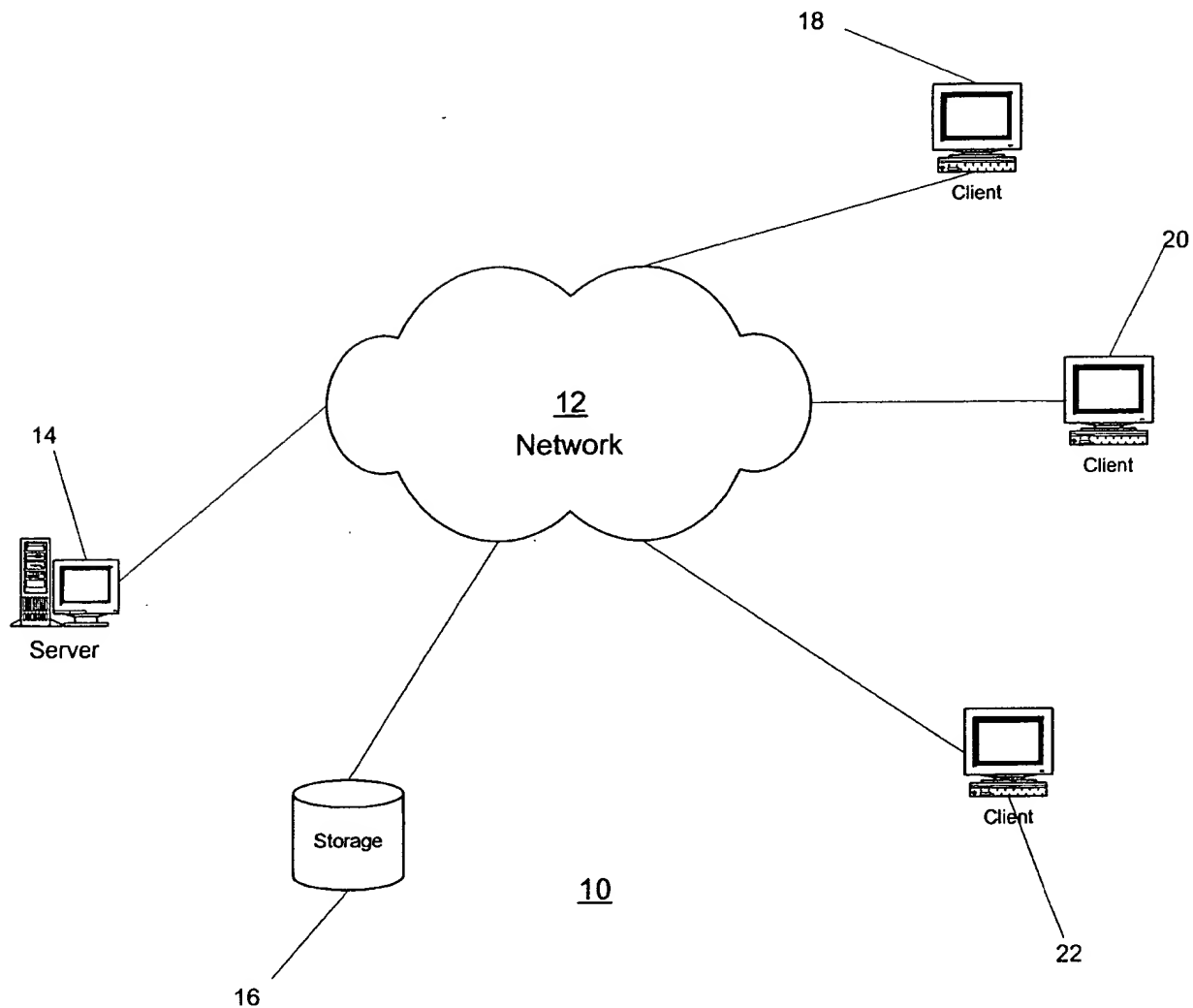# Figure 1

Ahrens et al.
AUS920010758US1
Data Processing System, Method, and
Product for Automatically Tracking
Insertions of Integrated Circuit Devices
Page 1 of 6

JTAG/I²C Busses
134

| Processor 101 | Processor 102 | | Processor 103 | Processor 104 | ATTN Signal | Memory 191 |

106
System Bus

Service Processor 135

PCI Bus 195

Memory Controller/ Cache 108

I/O Bridge 110

Service Processor mailbox interface and ISA Bus Access Passthrough 194

ISA Bus 196 → NVRAM 192

PCI/ISA Bridge 193

OP Panel 190

Local Memory 160

Local Memory 161

Local Memory 162

Local Memory 163

PCI Host Bridge 130

131 PCI Bus

EADS 132

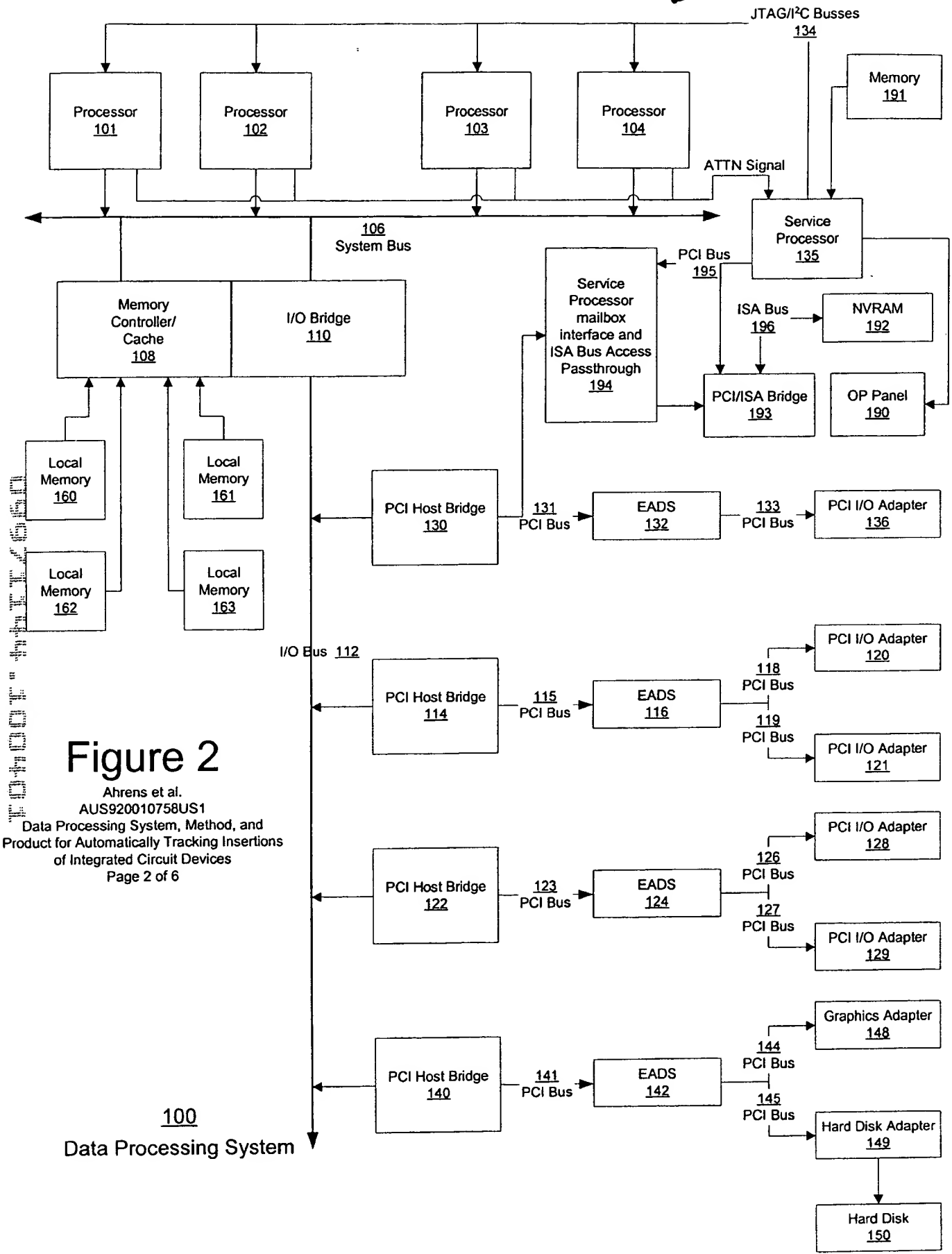133 PCI Bus

PCI I/O Adapter 136

I/O Bus 112

Figure 2

Ahrens et al.
AUS920010758US1
Data Processing System, Method, and
Product for Automatically Tracking Insertions
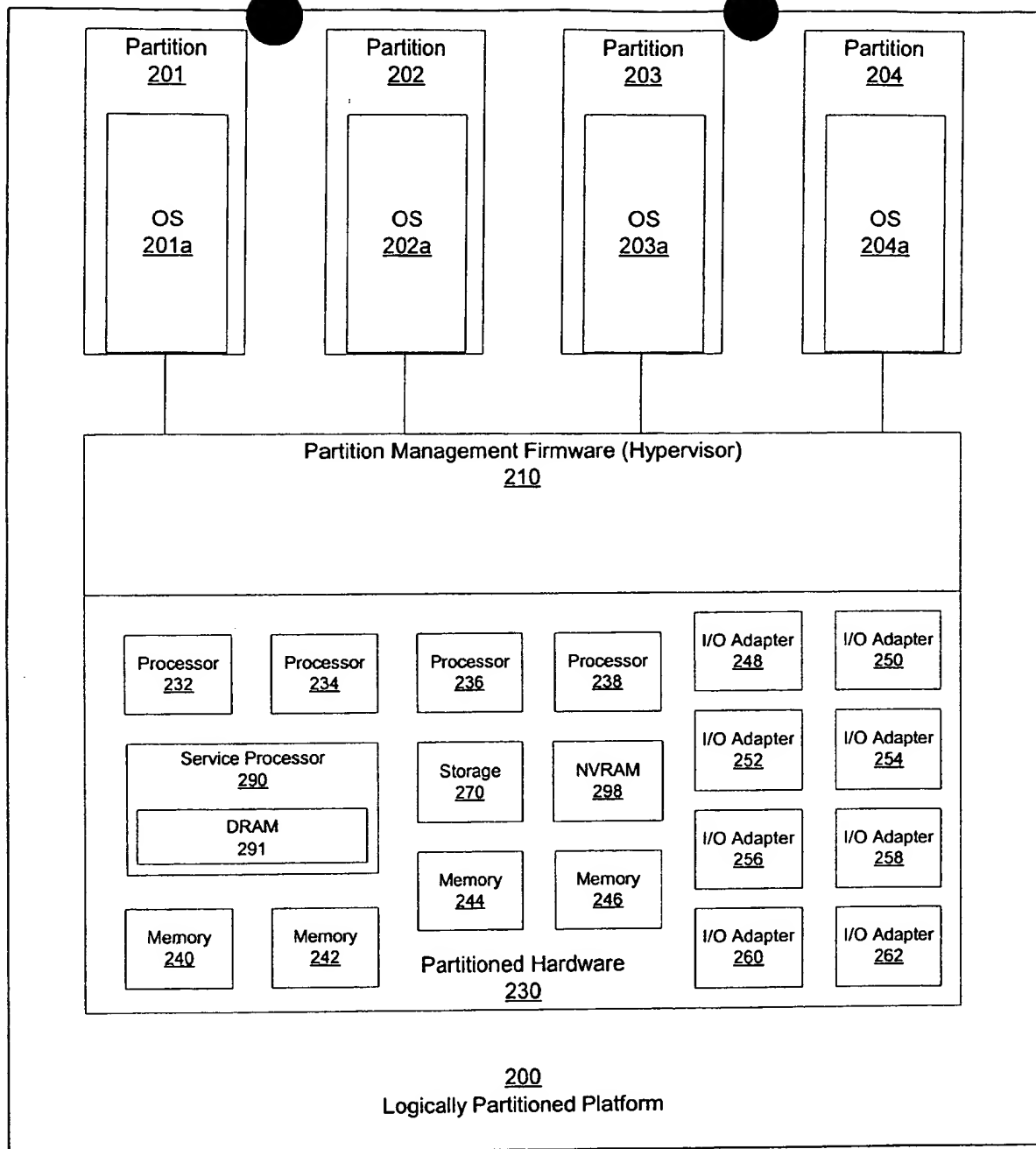of Integrated Circuit Devices
Page 2 of 6

PCI Host Bridge 114

115 PCI Bus

EADS 116

118 PCI Bus

PCI I/O Adapter 120

119 PCI Bus

PCI I/O Adapter 121

PCI Host Bridge 122

123 PCI Bus

EADS 124

126 PCI Bus

PCI I/O Adapter 128

127 PCI Bus

PCI I/O Adapter 129

Graphics Adapter 148

144 PCI Bus

100
Data Processing System

PCI Host Bridge 140

141 PCI Bus

EADS 142

145 PCI Bus

Hard Disk Adapter 149

Hard Disk 150

Partition **201**

OS **201a**

Partition **202**

OS **202a**

Partition **203**

OS **203a**

Partition **204**

OS **204a**

Partition Management Firmware (Hypervisor)
210

Processor **232**

Processor **234**

Processor **236**

Processor **238**

I/O Adapter **248**

I/O Adapter **250**

Service Processor **290**

DRAM **291**

Storage **270**

NVRAM **298**

I/O Adapter **252**

I/O Adapter **254**

I/O Adapter **256**

I/O Adapter **258**

Memory **244**

Memory **246**

Memory **240**

Memory **242**

Partitioned Hardware
230

I/O Adapter **260**

I/O Adapter **262**

200
Logically Partitioned Platform

Figure 3

Hardware System
Configuration Machine
299

Start
400

Establish an insertion
count field in vital
product data for each
MCM assembly
402

Establish a fault field
for each cache MCM
assembly in the
cache vital product
data
404

Track number of
insertions of each
MCM assembly
during manufacturing
process
406

Figure 4

Ahrens et al.
AUS920010758US1
Data Processing System, Method, and
Product for Automatically Tracking
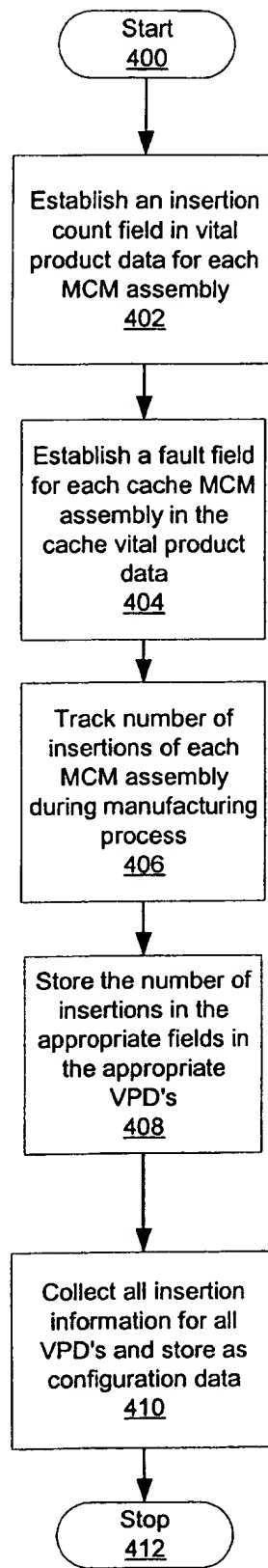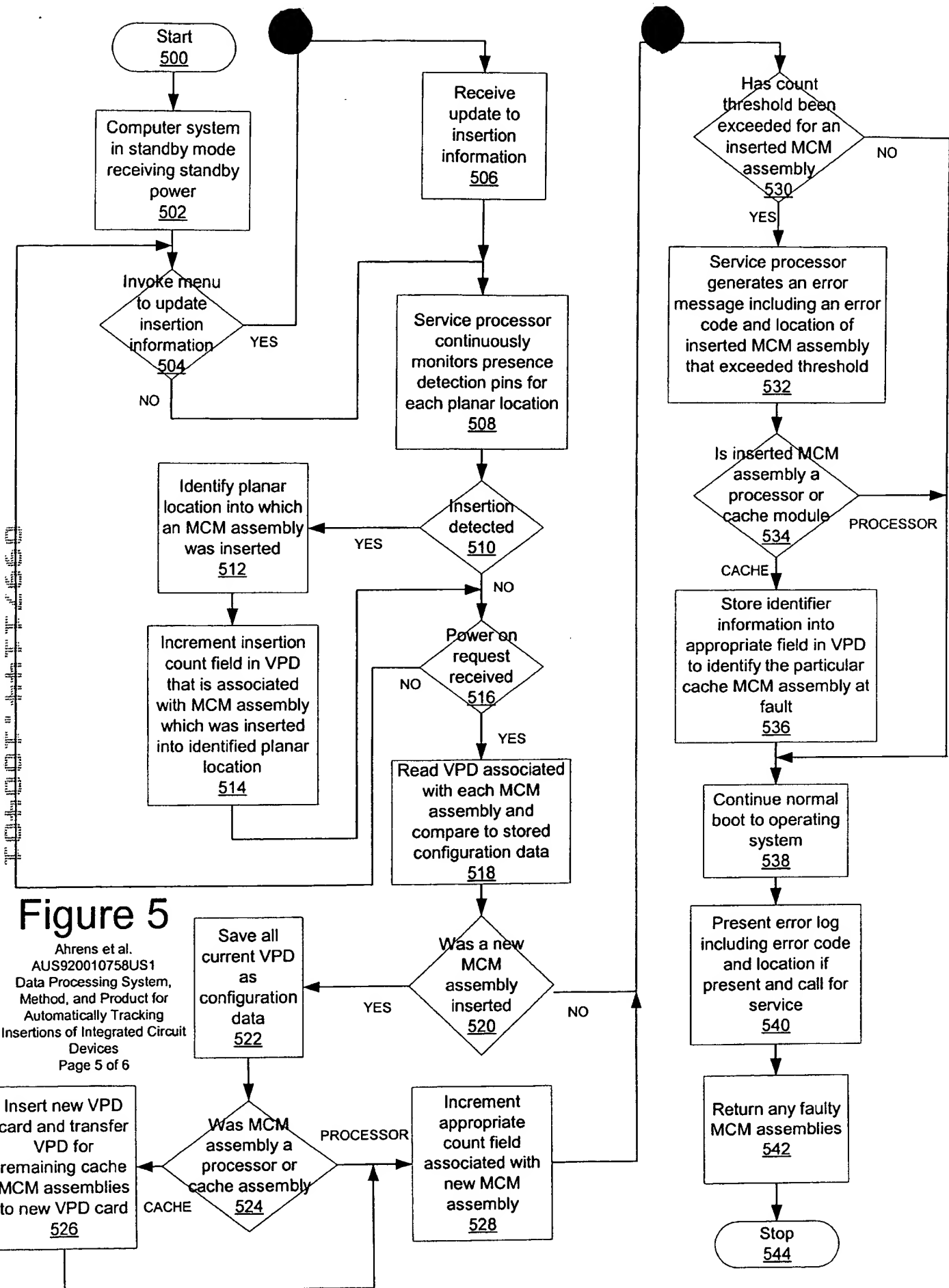Insertions of Integrated Circuit Devices
Page 4 of 6

Store the number of
insertions in the
appropriate fields in
the appropriate
VPD's
408

Collect all insertion
information for all
VPD's and store as
configuration data
410

Stop
412

Figure 5

Start
500

Computer system in standby mode receiving standby power
502

Invoke menu to update insertion information
504

YES

NO

Receive update to insertion information
506

Service processor continuously monitors presence detection pins for each planar location
508

Insertion detected
510

YES

Identify planar location into which an MCM assembly was inserted
512

Increment insertion count field in VPD that is associated with MCM assembly which was inserted into identified planar location
514

NO

Power on request received
516

NO

YES

Read VPD associated with each MCM assembly and compare to stored configuration data
518

Was a new MCM assembly inserted
520

YES

Save all current VPD as configuration data
522

NO

Insert new VPD card and transfer VPD for remaining cache MCM assemblies to new VPD card
526

Was MCM assembly a processor or cache assembly
524

CACHE

PROCESSOR

Increment appropriate count field associated with new MCM assembly
528

Has count threshold been exceeded for an inserted MCM assembly
530

NO

YES

Service processor generates an error message including an error code and location of inserted MCM assembly that exceeded threshold
532

Is inserted MCM assembly a processor or cache module
534

PROCESSOR

CACHE

Store identifier information into appropriate field in VPD to identify the particular cache MCM assembly at fault
536

Continue normal boot to operating system
538

Present error log including error code and location if present and call for service
540

Return any faulty MCM assemblies
542

Stop
544

600

MCM Assembly Name	Location Code	Number of Times Inserted		Other fields
Processor 1-8	U1.3-P1-C1	2		
Processor 9-16	U1.3-P1-C2	7		

602

604

MCM Assembly Name	Location Code	Number of Times Inserted	Fault	Other fields
L3 Module 1	U1.3-P1-C5	3	0	
L3 Module 15	U1.3-P1-C19	10	1	
L3 Module 16	U1.3-P1-C19	1	0	

606

Figure 6